

Claims

1. Process for preparing one or more purified fatty acids, said process comprising at least the steps of:
  - 5 (A) hydrolytic splitting of one or more oils and/or fats with a phosphorus content below 200 ppm and separating a composition comprising crude fatty acids,
  - (B) heat-treating the composition obtained by step (A) in a thermal pre-treatment unit, and
  - 10 (C) distilling the heat-treated composition obtained by step (B) in a high vacuum distillation unit,wherein the composition that is obtained by the thermal pre-treatment step (B) comprises less monoglycerides than the crude fatty acids obtained by step (A), and with the proviso that the hydrolytic splitting step (A) is not a  
15 saponification step.
2. Process according to claim 1 wherein the heat-treatment in step (B) is conducted at a temperature of 150-280°C, more preferably at a temperature of 200-250°C, and most preferably at a temperature of about 225°C.  
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3. Process according to claim 1 or 2 wherein in step (B) the composition is heat-treated in a continuously running thermal pre-treatment unit, preferably in a unit wherein the components of the composition have a residence time distribution of 0.7-1.5.  
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4. Process according to claim 3 wherein both the heat-treating and the distillation step and, preferably, also the splitting process, is conducted in a continuous fashion.
- 30 5. Process according to any one of claims 1-4 wherein the crude fatty acid composition that is obtained by the thermal pre-treatment step (B)

comprises at least 80% by weight (wt%) of free fatty acids, preferably at least 85 wt% of free fatty acids, more preferably at least 90 wt% of free fatty acids, and most preferably at least 93 wt% of free fatty acids, based on the weight of the thermally pre-treated composition.

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6. Process according to any one of claims 1-5 wherein the crude fatty acids that are obtained by the thermal pre-treatment step (B) are essentially free of glycerol and preferably have an acid value of at least 150 mg/kg KOH.

10 7. Process according to any one of claims 1-6 wherein in step (C) the heat-treated composition of step (B) is distilled at a pressure within the range of 0.5-0.001 kPa and at a temperature of from 100 to 200°C, preferably at a pressure in the range of 0.1 to 0.001 kPa and a temperature of from 120 to 180°C.

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8. Process according to any one claims 1-7 wherein step (C) is conducted in a short path distillation unit.

20 9. Process according to any one claims 1-8 wherein at least part of the residue that is obtained by the distillation step (C) is recycled to step (A).

10. Process according to any one claims 1-9 wherein the purified fatty acid obtained by the distillation step (C) comprises below 0.5% by weight of monoglyceride.

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11. Process according to any one of claims 1-10, wherein the oils and/or fats with a phosphorus content below 200 ppm that are subjected to the hydrolytic splitting in step (A) are selected from the group consisting of crude or degummed vegetable oils and fats, crude or degummed animal oils and fats, and acid oils, preferably selected from crude or degummed vegetable oils and fats, most preferably from crude or degummed vegetable

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oils and fats that, after hydrolytic splitting of said oils and/or fats, provide saturated or unsaturated, optionally hydroxy containing, crude fatty acids with 6 to 24 carbon atoms, or mixtures thereof.

- 5 12. Process according to any one of claims 1-11, wherein one or more conventional additives are used before, during, or after the thermal pre-treatment step (B), but in any case after the hydrolytic splitting step (A) and prior to the distillation step (C), said additives being effective for the removal of colour bodies.